Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently Amended) A method for determining ~~an~~ a tilt angle of an optical pickup head of an optical drive, applied in a jitter inspection device comprising a jig for simulating and adjusting a tilt angle of the optical pickup head, and a jitter meter installed on the jig for inspecting jitter values of the optical pickup head at different tilt angles, comprising the steps of:

measuring the optical pickup head with the jitter meter utilizing a quadratic surface equation $Z = ax^2 + by^2 + cx + dy + e$ and using the jitter inspection device, where x is the tilt angle in radial direction, y is the tilt angle in tangential direction, Z is the jitter value, and a, b, c, d, e are unknown constants;

obtaining five sets of tilt angles of (x1, y1), (x2, y2), (x3, y3), (x4, y4), and (x5, y5), for the optical pickup head by adjusting the jig five times;

creating a simultaneous equation according to the five sets of tilt angles and their corresponding jitter values Z1, Z2, Z3, Z4 and Z5;

solving the simultaneous equation to obtain the result of a1, b1, c1, d1 and e1 for unknown constants a, b, c, d, and e;

substituting the values of a1, b1, c1, d1 and e1 in the quadratic surface equation to create a quadratic surface equation $Z = a1x^2 + b1y^2 + c1x + d1y + e1$;

solving the quadratic surface equation to obtain a minimum jitter value and an optimum tilt angle; and

producing a barcode in accordance with the minimum jitter value as a basis for adjusting the emitting angle of the optical pickup head.

2. (New) A method for determining a tilt angle of an optical pickup head of an optical drive by measuring the optical pickup head with a jitter meter installed on a jig utilizing a quadratic surface equation $Z = ax^2 + by^2 + cx + dy + e$ and using the jitter inspection device, where x is the tilt in radial direction, y is the tilt in tangential direction, Z is the jitter value, and a, b, c, d, e are unknown constants, comprising the steps of:

obtaining five sets of tilt of (x1, y1), (x2, y2), (x3, y3), (x4, y4), and (x5, y5), for the optical pickup head by adjusting the jig five times;

creating a simultaneous equation according to the five sets of tilt and their corresponding jitter values Z1, Z2, Z3, Z4 and Z5;

solving the simultaneous equation to obtain the result of a1, b1, c1, d1 and e1 for unknown constants a, b, c, d, and e;

substituting the values of a1, b1, c1, d1 and e1 in the quadratic surface equation to create a quadratic surface equation $Z = a1x^2 + b1y^2 + c1x + d1y + e1$; and

solving the quadratic surface equation to obtain a minimum jitter value and an optimum tilt angle.

3. (New) A method according to claim 2, where in the steps further comprising:

producing a barcode in accordance with the minimum jitter value as a basis for adjusting the emitting angle of the optical pickup head.